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EXAMINER	
RUMP, RICHARD M	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/582,707	TWITCHEN ET AL.	
	Examiner	Art Unit	
	Richard M. Rump	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-74* is/are pending in the application.

4a) Of the above claim(s) *54-74* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-53* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/31/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 1 & 2-53 are pending and presented for examination. Claims 54-74 are withdrawn. The references supplied on the IDS dated 31 July 2009 have only been considered on their pertinent English sections.

Claim Objections

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 recites a photoluminescence peak (533) at a wavelength that is not included in the claim it is dependent upon.

Claim Rejections - 35 USC § 102/103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 & 2-7, 11, 21-26, 29-35, 40-49, 51-52 are rejected under 35 U.S.C. 102(e) as being anticipated by, or in the alternative under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427).

Regarding claims 1 and 29, Linares teaches a method of growing a single crystal diamond by using a diamond substrate with a certain orientation in a CVD

process (pg 32, lines 31-32), introducing a source gas to grow a single crystal diamond having a certain orientation, wherein the incorporation of a boron dopant is controlled (pg 33, lines 8-30). Linares discloses that the doping of the diamond structure by dopant atoms increases the average distance between carbon atoms in the diamond because the dopant atoms are larger than carbon atoms (pg 13, lines 23-31). Thus, these marks made by the dopant would only be viewable under special viewing conditions, and can be considered fingerprints. Linares further discloses that the addition of boron in diamond results in optical absorption in the near infrared. Thus, the mark caused by boron impurities would be rendered detectable when the diamond material is exposed to a certain radiation. It is to be noted that the addition of an impurity is disclosed by applicant and that it will result in the formation of a defect (one-dimensional defect *inter alia* a point defect) which will result in a change of the phononic vibration frequency of the cubic diamond structure. One of ordinary skill in the art of crystallography would be aware of this fact and would know that as such, the structure will vibrate at a characteristic wavelength. Said characteristic wavelength can be controlled via said adjustment to which a skilled artisan would do.

Regarding claims 3 and 4, Linares teaches a process of incorporating boron impurities into a single crystal diamond, wherein the source gas has been enriched with diborane (pg 35, lines 17-20). This would inherently cause the boron dopant to be provided in one or more layers or regions of the diamond material during synthesis, as the dopant is introduced in a controlled manner continuously.

Regarding claim 7, Linares discloses that the single crystal diamond contains boron (pg 33, lines 8-30). Boron doping is known to impart a blue coloration to diamond crystal, as disclosed in Linares (pg 16, lines 9-12). Because the blue wavelength lies within 400 to 500 nm, it is inherent that a diamond crystal with boron doping would phosphoresce within the range of the instant claim.

Regarding claim 11, Linares discloses that the boron content is higher than the nitrogen content (pg 27, lines 22-29).

Regarding claim 21-23, doping the diamond crystal would inherently produce a defect center because the dopant atoms (boron or nitrogen) are larger than carbon atoms (pg 13, lines 23-30), and that these defects are not found in natural diamond because the defects present in the CVD diamonds are doped in a controlled manner, which is different from that of a naturally occurring diamond.

Regarding claims 24-25, modifying the diamond would inherently cause the optical properties of the diamond to change, thereby altering the measurable optical properties, allowing changes to be measured and thereby allowing identification of modification.

Regarding claim 26, Linares discloses that the doped diamond crystal have a unique combination of properties as a result of their impurities (pg 12, lines 1-14). Thus, it would be inherent that the resulting fingerprint can be used to identify the synthetic nature of the material it is present in.

Regarding claim 30, Linares teaches a single crystal diamond by using a substrate with a certain orientation in a CVD process (pg 32, lines 31-32), introducing a

source gas to grow a single crystal diamond having a certain orientation, wherein the incorporation of a boron dopant is controlled (pg 33, lines 8-30). Linares discloses that the doping of the diamond structure by dopant atoms increases the average distance between carbon atoms in the diamond because the dopant atoms are larger than carbon atoms (pg 13, lines 23-31). Thus, these marks made by the dopant would only be viewable under special viewing conditions, and can be considered fingerprints.

Regarding claim 31, Linares discloses that the CVD single crystal diamond may be used as a gemstone (pg 15, lines 23-27).

Regarding claims 32-34, doping the diamond crystal would inherently produce a defect center because the dopant atoms (boron or nitrogen) are larger than carbon atoms (pg 13, lines 23-30), and that these defects are not found in natural diamond because the defects present in the CVD diamonds are doped in a controlled manner, which is different from that of a naturally occurring diamond.

Regarding claim 35, it is readily apparent that the impurities as fingerprint form defect centers because they are larger than carbon atoms. Furthermore, it is also readily apparent to observe optical properties through the table of the gemstone, as doing so minimizes refraction.

Regarding claim 40, Linares discloses a CVD single crystal diamond wherein there are a multitude of doped layers (pg 39, lines 20-23). It is readily apparent to one skilled in the art that a gemstone cut from this diamond would have layers approximately parallel with the table of the gemstone, since the top layer would already be flat and therefore be the basis for the gemstone table.

Regarding claims 41-43, Linares discloses that the CVD single crystal diamond doped with boron may be used as a surgical blade or other cutting tool (pg 16, lines 3-6).

Regarding claims 44-47, Linares discloses a CVD single crystal diamond doped with boron that has layer thickness of 250 μm (pg 40, lines 18-24).

Regarding claims 48-49, Linares discloses a CVD single crystal diamond doped with nitrogen that has layer thickness of at least 20 μm, preferably at least 50 μm (pg 25, lines 11-27).

Regarding claim 51, Linares discloses that the CVD single crystal diamond may contain layers of varying impurity levels. This would inherently possess properties of having discrete layers under suitable illumination conditions because varying levels of impurities would alter the illumination patterns.

Regarding claim 52, Linares discloses that the CVD single crystal diamond may contain a layer free of defects while other layers have defects (pg 12, lines 15-22).

Claims 5-6, 12, 50 are rejected under 35 U.S.C. 102(e) as being anticipated by, or in the alternative under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427), as evidenced by Vlasov (*Relative Abundance of Single and Vacancy-Bonded Substitutional Nitrogen in CVD Diamond,* phys. Stat. sol 181, 83, 2000). Both references appear in applicant's IDS and thus are not being provided with this office action.

Regarding claims 5-6, Linares recognizes that nitrogen doping may be used for similar purposes as boron doping (pg 14, lines 20-30). If nitrogen is used as a dopant in

the single crystal diamond structure, the single crystal diamond would inherently show photoluminescence peaks at 533 nm, 575 nm or 638 nm as evidenced by Vlasov et al (*Relative Abundance of Single and Vacancy-Bonded Substitutional Nitrogen in CVD Diamond,* pg 85, Fig. 1).

Regarding claim 12, Linares discloses that the single diamond crystal may contain boron and nitrogen content (pg 22, lines 10-18). Boron is known to impart a blue coloration to diamond crystal, as disclosed in Linares (pg 16, lines 9-12). Because the blue wavelength lies within 400 to 500 nm, it is inherent that a diamond crystal with boron doping would phosphoresce within the range of the instant claim. Additionally, if nitrogen is used as a dopant in the single crystal diamond structure, the single crystal diamond would inherently show photoluminescence peaks at 533 nm, 575 nm or 638 nm as evidenced by Vlasov et al (*Relative Abundance of Single and Vacancy-Bonded Substitutional Nitrogen in CVD Diamond,* pg 85, Fig. 1).

Regarding claim 50, Linares discloses that nitrogen doping may be used for similar purposes as boron doping (pg 14, lines 20-30). If nitrogen is used as a dopant in the single crystal diamond structure, the single crystal diamond would inherently show photoluminescence peaks at 575 nm and 638 nm as evidenced by Vlasov et al (*Relative Abundance of Single and Vacancy-Bonded Substitutional Nitrogen in CVD Diamond,* pg 85, Fig. 1). These wavelengths are associated with orange colorations. Additionally, boron doping is known to impart a blue coloration to diamond crystal, as disclosed in Linares (pg 16, lines 9-12).

Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427).

Regarding claims 8-9, Linares discloses a boron concentration in the single crystal diamond between 0.03 ppm and 3,000 ppm. The instant claim recites an overlapping range, which is a prima facie case of obviousness (See MPEP 2144.05). It would have been obvious, at the time of invention, for one skilled in the art to select a concentration within the range prescribed by Linares.

Claims 36-38 rejected under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427), further in view of Gilbertson (US Patent 6,665,058).

Regarding claim 36, Linares does not disclose a gemstone having a solid geometrical shape or an unfilled geometrical shape, with an axial symmetry perpendicular to the table of the gemstone.

Gilbertson discloses a method of determining the symmetry for gemstones having the qualities of the instant claim (abstract).

It would have been obvious at the time of invention to one of ordinary skill in the art to apply the teachings of Gilbertson to Linares in order to make a gemstone having a solid geometrical shape with axial symmetry perpendicular to the table of the gemstone because the lack of such features decreases the brilliance of the gemstone as well as its value (Gilbertson, column 4, lines 5-15).

Regarding claim 37, Gilbertson teaches a gemstone that has a generally round shape (see Fig 5-8). This generally round shape lends to the symmetry of the

gemstone. Any feature observable through the table of the gemstone would constitute a spot.

Regarding claim 38, the gemstones of Gilbertson (Fig. 5-8) have round brilliant forms (columns 3-4, lines 33-4).

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427), in view of Falabella (US Patent 5,474,816) and Fernandes et al ("Porous silicon capping by CVD diamond", *Vacuum*, Vol 52, pg 215-218).

Regarding claims 13 and 14, Linares does not disclose a layer or region that emits 737 nm radiation. Falabella teaches a diamond material containing silicon dopants (column 3, lines 23-48). According to Fernandes, silicon has photoluminescence at 737nm (pg 216, Fig 2).

One of ordinary skill in the art would have been motivated to use silicon as a dopant in a CVD single crystal diamond, as taught by Falabella, in the process taught by Linares because it reduces the stress levels present in the diamond (column 3, lines 23-48).

Regarding claim 15 and 16, neither Linares nor Falabella disclose the concentration of silicon added as a dopant in the single crystal diamond. Linares does disclose that the amount of impurity present affects the crystal lattice of the diamond structure (pg 13, lines 25-28). Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to optimize the concentration of the dopant present in

the diamond to arrive at a dopant concentration that would not adversely affect the diamond structure (See MPEP 2144.05 II).

Claims 17-18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427), in view of Vlasov et al (*Relative Abundance of Single and Vacancy-Bonded Substitutional Nitrogen in CVD Diamond,* phys. Stat. sol 181, 83, 2000).

Regarding claim 17, Linares discloses that single diamond crystals containing impurities such as boron have optical absorption coefficients, but does not teach their observance with the human eye using filters and lenses.

Vlasov teaches measuring the luminescence with a spectrometer (pg. 84), which inherently have lenses and filters incorporated within them. This luminescence would be observed with the human eye if desired, because the luminescence is within the visible wavelengths (pg 85).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the method of Vlasov to determine the level of impurities present in the diamond crystal made in Linares because the process of Vlasov can be used to determine the amount and type of dopants present in the crystal (Vlasov, pg 84).

Regarding claim 18, Vlasov measures the intensity of the photoluminescence emitted by the dopants in the crystal (pg 85, Fig 1).

Regarding claim 20, Vlasov shows an optical image capture that is produced from a spectrophotometer, which inherently containts lenses and filters (pg 85, Fig 1).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427) in view of Vlasov et al (*Relative Abundance of Single and Vacancy-Bonded Substitutional Nitrogen in CVD Diamond,* phys. Stat. sol 181, 83, 2000), as applied to claim 18 above, further in view of Falabella (US Patent 5,474,816) and Fernandes et al ("Porous silicon capping by CVD diamond", *Vacuum*, Vol 52, pg 215-218).

Regarding claim 19, Linares in view of Vlasov do not teach detecting 737 nm radiation. Falabella and Fernandes teach silicon doping of diamonds (Falabella, column 3, lines 23-48; Fernandes, pg 216, Fig 2), which would inherently give off 737 nm radiation (Fernandes, pg 216, Fig 2).

Thus, one of ordinary skill in the art at the time of invention would be motivated to detect 737 nm radiation using the radiation detection method of Vlasov in the process taught by Linares modified by Falabella, because if silicon impurities were present in the diamond, then one would want to detect their presence.

Claims 27-28, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427), in view of Gresser (US Patent 4,392,476).

Regarding claims 27-28, Linares does not teach the impurity as a fingerprint being used to identify the manufacturer or in the manner of a trademark.

Gresser teaches a method of placing identifying indicia on the surface of gemstones, such as trademark symbols or names (column 2, lines 13-23).

Thus, it would have been obvious at the time of invention to one of ordinary skill in the art to use the impurity fingerprint of Linares to identify the manufacturer or in the

manner of a trademark, in order to categorize various characteristics of the diamond for valuation purposes as described by Gresser (Gresser, column 1, lines 10-17).

Regarding claim 53, the process of Linares in view of Gresser necessarily produce a gemstone product containing a fingerprint used in the manner of a trademark.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linares et al (WO 03/014427), as applied to claim 35 above, further in view of Buchner (US Patent 5,524,458).

Regarding claim 39, Linares does not teach a rectangular shaped gemstone.

Buchner teaches gemstones that have rectangular shapes (see Fig 2, items 4, 8), as described in the specification (column 8, lines 8-13).

It would have been obvious to one of ordinary skill at the time of invention to make a gemstone with a rectangular shape as taught by Buchner, as it is clear that there is demand for gemstones of such shapes, from the product made by the process taught by Linares.

Because of the way in which the diamond is made in the process of Linares, the observable feature would be in the shape of a square because the doping is done by layer (pg 14, lines 20-30), and so the features would take the shape of the cut gemstone.

Response to Arguments

Applicant's arguments filed 31 July 2009 have been fully considered but they are not persuasive.

Regarding applicant's arguments that Linares' disclose is set to "change the properties of the prepared diamond". This argument seems to fit in with what applicant is currently claiming! The introduction of impurities will create defects as discussed *supra*. Furthermore, regarding the further argument that Linares will produce a diamond which is blue, which can be detected under normal viewing, this argument is also not persuasive. The usage of terms such as easily detectable, etc. are misleading as while Linares states that the diamond will be blue, this is merely a disclosure of a **possible** diamond! This is not a disclosure that that is the only diamond the doping of Lineras results in. The disclosure of "higher adsorption of YAG laser light..." can be construed to a skilled artisan as making the diamond mark detectable while under regular light this infrared radiation cannot be seen (Furthermore it would need to be read under FTIR which uses infrared radiation and is well known in the materials art to be used). It is to be noted that applicant's argument concerning that Linares wishes to change the properties of the diamond (color and optical), applicants are doing the same thing. These color changes under normal viewing conditions, as detailed above, are only merely a usage of the process of Linares, not 100% the case and as such the argument presented by applicant there is not persuasive.

Regarding applicant's argument that "The chemical dopants, boron and nitrogen… are introduced as impurities 'in order to provide improved properties', and there is no disclosure or even a suggestion that these can be sued to provide a mark of origin or fingerprint in a synthetic CVD diamond...", this argument is not persuasive. Lineras instead as applicant mentions in their remarks at page 5 that Lineras identifies

doping of a moncrystalline diamond but does not cover the doping with impurities such as boron and nitrogen. The Examiner wishes to note that the there is no requirement of the prior art to mention every possible usage of it, the controlling of the doping concentration to yield a similar effect is actually well within the skill level of those of ordinary skill in the crystallographic arts for the very reason that impurity control is well known to result in various controlling of structures.

Regarding applicant's argument that the subject matter of Vlasov would not lead a skilled artisan to practice the invention with Lineras to arrive at the instant claims, this argument is moot. It is to be noted that Vaslov is an evidentiary reference and only proves to show the PL line overlap.

Regarding applicant's arguments concerning Scarsbrook, these arguments are persuasive and the rejection is removed.

Regarding applicant's argument that "Linares provides an incredibly broad range of boron addition, with little or no supporting evidence that is able to produce products across the entire range claimed...", applicant has not presented sufficient evidence to provide for an unexpected result and as such this argument is currently moot. There is no requirement that the prior art discloses an exact teaching, nor has applicant actually provided any support for any of their allegations in the paragraph this argument is found within (remarks at 7). Furthermore, the claims are equally broad.

Regarding applicant's allegation that the coloration of diamond would reduce its usefulness as a gemstone, this argument is explicitly traversed. While CVD diamond is not useful as a gem stone, and colored diamond is not highly sought after, this is no

reasonable expectation that one would never buy a colored CVD diamond, and furthermore Lineras merely disclosed said colored diamond as a possible diamond. As shown above, Lineras is not requiring that the diamond be colored under visible light. Regarding the argument that the amount of light leaked out will have no effect on the color of the stone, this argument is also traversed. Given the isotropic nature of CVD diamond, any form of defect seen from certain angles actually will impart a visual change. This is commonly done in so called 'holographic' processes (namely holography (crystal data storage)) where the viewing angle widely controls the emitted form of radiation (*inter alia* light color). As such there is rationale for the above support for using Gilberston.

Regarding applicant's argument that Falabella and Fernandes are irrelevant. Specifically the argument that Falabella deals with an amorphous crystal, while this is true it is to be noted that the diamond of Falabella cannot be 100% amorphous, it must have some crystallinity to qualify as a CVD diamond as the annealing temperature of Lineras would result in the formation of some crystalinity meeting the limitations of the instant claim. Diamond can be doped with any material that meets the requirements as spelled out in Hume-Rothery for solid solution formation, and that meets the requirements of Schotky and Frenkel. Silicon would fit this requirement for the CVD diamond as it forms as an amorphous layer first and then crystallizes from the epitaxial growth. While there may be no need to study layer thickness, the Examiner notes that this is an argument that is off point. Regarding the argument concerning Fernandes, the

PL overlap is of no significance as applicant has not provided an unexpected result therein.

Regarding applicant's argument that Vlasov's disclose of the N and N-V lines migiht not be used for identification of a fingerprint or mark of origin, this argument is not persuasive as Vlasov as disclosed above is combinable with the prior art, obviousness only needs one reason to connect to combine the invention. Furthermore, applicant has not provided any teaching to show that Vlasov cannot be used as such! Regarding applicant's argument that "since Lineras disclosed a colored diamond" that there is no reason to expose it to radiation, it is noted that the YAG source would meet the requirement of 'radiation' given that terms broadest reasonable interpretation, as such this argument is moot.

Regarding applicant's argument that the combination of Linares, Vlasov, Falabella and Fernandes does not suggest "that 737 nm emission can be used as a means for detection a mark", this argument is not persuasive as FTIR would pick this wavelength up and it would be present as an emission. Applicant has not provided proof otherwise (it is noted that wavelengths can be controlled via any filtering, etc., means), or an unexpected result as to the important in the present invention of said wave length.

Regarding applicant's argument that Gresser is not combinable with Lineras due to the fact that Gresser discloses a surface impurity, this is not persuasive as there is no requirement that the defect be in the bulk! Given that one has to use the magnifying glass to see the mark of Gresser is also not persuasive as applicant's instant claims can also be read to require a magnifying glass when the claim is given its broadest

reasonable interpretation. Furthermore it is noted that while the mark 'does not emit visible light itself', that is also something that is covered by applicant's instant claim 1 (and dependents 27-28 and independent claim 30 and dependant 53) when given its broadest reasonable interpretation!

Regarding the argument that Lineras does not disclose a diamond meeting the requirements for instant claim 30 (*inter alia* claim 39), it is to be noted that Lineras discloses a similar method and a diamond being made from such would be quite obvious to a skilled artisan. As such, Buchner is not irrelevant and applicant has presented no argumentation as to why it is not combinable.

The objection to claim 5 is maintained. Claim 5 does not disclose a wavelength of 533 nm, only 537 or 637 nm! While support in the specification may exist, the claim lacks proper antecedent basis for having said wavelength. In sum, applicant has not differentiated between their 'deliberate' process and one which 'accidentally' accomplishes the same result.

Conclusion

Claims 1 & 3-53 remain rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard M. Rump whose telephone number is (571) 270-5848. The examiner can normally be reached on Monday through Friday 7:00 AM-4:30 PM (-5 GMT).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571)272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. M. R./
Examiner, Art Unit 1793

/Stuart Hendrickson/

Primary Examiner, Art Unit 1793